



The Town of Vienna 2007 Annual Water Quality Report for the Town of Vienna and the surrounding service area

MESSAGE FROM THE TOWN MANAGER

This is the Town of Vienna's tenth annual report to inform you about your drinking water quality. As a part of the Safe Drinking Water Act of 1996, the U.S. Environmental Protection Agency (EPA) is requiring all water utilities across the nation to mail their customers a Water Quality Report by July 1, 2008. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply.

The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health. We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables in this report list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were either not present or were below the detection limits of the laboratory equipment. All of our water quality data is from testing done in 2007. However, the Commonwealth allows us to monitor for some contaminants less than once a year because the concentration of these contaminants does not change frequently. Even though some of our data may be more than one year old, it is accurate.

Is your water safe to drink? Absolutely! The Town of Vienna water system did not have any violations during the year. We're proud to share our water quality test results with you. Also, a "source water assessment" of our system has been conducted by the Virginia Department of Health. Wells #1 & #9 were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. This report consists of maps showing the assessment area, land use activities, and records of any contamination within the last five years. For further information please call the contact number below.

Sincerely,

John H. Schoeberlein

John H. Schoeberlein
Town Manager

This report contains important information about your drinking water. If you are not certain that you understand it, discuss it with someone who does or who can translate it for you if English is your second language. For more information, contact Vernon R. Anderson, Town of Vienna Water & Sewer Superintendent, at 703-319-8610 or e-mail dpw@viennava.gov.

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

Decisions concerning Vienna's water are made by the Town Council. Regular meetings are normally held the first and third Mondays of the month (except July and August) at 8 p.m. in the Council Chamber at Town Hall.

GENERAL INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

All drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline.

WATER SOURCES

For the calendar year 2007, the Town of Vienna was supplied with treated surface water from the Potomac River by the Fairfax County Water Authority (FCWA) and the City of Falls Church. The Town purchases treated water from the Washington Aqueduct supplied by Falls Church. The final source is groundwater from two wells in the Town of Vienna. These sources are blended in the Town's delivery system and comprise approximately 1% of our total usage.

HOW DO I READ THIS CHART?

Our water is tested to assure that it is safe and healthy. Contaminants in the drinking water are routinely monitored according to Federal and State regulations. The table contained in this report shows the most recent results of our monitoring. Typical sources of contamination show where this substance usually originates. The following definitions are provided to help you better understand terms and abbreviations.

- New in 2002 was Total Organic Carbon Removal. Total Organic Carbon has no health effects; however, it provides a medium for the formation of disinfection byproducts. Compliance with the treatment technique reduces these byproducts. In this case the level is a "removal ratio" that must be greater than 1.0.
- New for the 2004 year was the FCWA sampling program for cryptosporidium. Their results and information are included.
- Non-detects (ND) – laboratory analysis indicates that the contaminant is not present.
- Parts per million (ppm) – one part per million corresponds to one minute in two years or a single penny in \$10,000.
- Parts per billion (ppb) – one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.
- Parts per trillion (ppt) – one part per trillion corresponds to one minute in 2,000,000 years or a single penny in \$10,000,000,000.
- Picocuries per liter (pCi/L) – picocuries per liter is a measure of the radioactivity in water.
- Nephelometric Turbidity Unit (NTU) – nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.
- Action Level (AL) – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Treatment Technique (TT) – a required process intended to reduce the level of a contaminant in drinking water.
- Maximum Contaminant Level (MCL) – the highest level of a contaminant that is allowed in drinking water. MCLs are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA assumes that the average adult drinks two liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-one million chance of having the described health effect for other contaminants.
- Maximum Contaminant Level Goal (MCLG) – the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- Maximum Residual Disinfectant Level (MRDL) – the maximum level of total chlorine allowable by regulation.

PERCHLORATE RESEARCH

Perchlorate is a naturally occurring as well as man-made compound. Its presence in drinking water is currently unregulated and utilities are not required to monitor for it. In 2007, the Washington Aqueduct and Fairfax Water began voluntarily participating in a non-regulatory perchlorate sampling project for the Potomac River funded by the EPA, which has established a reference dose of 24.5 ppb for perchlorate. A reference dose is a scientific estimate of a daily exposure level that is not expected to cause adverse health effects in humans, and will be used in EPA's ongoing efforts to address perchlorate in drinking water.

The samples collected in 2007 from our Potomac River water filtration plant sources and treated water have shown amounts of perchlorate at 3.1 ppb or less, far below the EPA reference dose level. More information about perchlorate and the Washington Aqueduct's participation in the EPA's sampling project is available at <http://www.epa.gov/reg3wapd/drinking/dc.htm>.

PHARMACEUTICALS AND PERSONAL CARE PRODUCTS IN DRINKING WATER

Pharmaceuticals and Personal Care Products as Pollutants (PPCPs) refer, in general, to any product used by individuals for personal health or cosmetic reasons or used by agribusiness to enhance growth or health of livestock. PPCPs comprise a diverse collection of thousands of chemical substances, including prescription and over-the-counter therapeutic drugs, veterinary drugs, fragrances, lotions, and cosmetics.

Studies have shown that PPCPs are present in waterbodies across the country. Among the compounds that have been found in trace amounts in the National Capital Region are caffeine; the pain relievers Ibuprofen and Naproxen; Triclocarban, a disinfectant found in soap; Monensin, an antibiotic given to livestock; Sulfmethoxazole, an antibiotic used to treat infections; and Carbamazepin, an anti-seizure drug.

More research is needed to determine the extent of possible ecological harm caused by PPCPs, and any role they may have in potential human health effects. To date, scientists have found no evidence of adverse human health effects from PPCPs in the environment.

The EPA will continue to investigate this issue to consider if measures are necessary to protect the health of the public and the environment. In addition, organizations such as the American Water Works Association Research Foundation, the City of Falls Church, and other water utilities throughout the United States support drinking water research projects, including research on PPCPs.

Additional information about PPCPs can be found at <http://epa.gov/ppcp>.

2007 SOURCE WATER *CRYPTOSPORIDIUM* INFORMATION

The Town's water suppliers have been monitoring the source waters for compliance with the EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). The EPA created this rule to provide for increased protection against microbial pathogens, such as *Cryptosporidium*, in public water systems that use surface water sources.

Even though monitoring has been completed for the LT2ESWTR, the Town's suppliers have continued to test for *Cryptosporidium*, and the data collected in 2007 are summarized in the table below.

| Source (before treatment) | Average <i>Cryptosporidium</i> concentration (oocysts/Liter) |
|---------------------------|--|
| Potomac River | 0.018 |
| Occoquan Reservoir | 0 |

WATER QUALITY RESULTS

I. Microbiological Contaminants – Were there any detections? (✓) Yes, as described below. () No.
Laboratory results indicated that coliform bacteria were present in one test out of 387 samples.

II. Lead and Copper Contaminants – Were there any detections? (✓) Yes, as described below. () No.

| Contaminant | Units of Measurement | Action Level | MCLG | Results of Samples for the 90 th Percentile Value | Action Level Exceedance? | Sampling Year | # of Sampling Sites Exceeding Action Level | Typical Source of Contamination |
|-------------|----------------------|--------------|------|--|--------------------------|---------------|--|---|
| Lead | ppb | 15 | 0 | 3 | NO | 2007 | 0 | Corrosion of household plumbing systems |
| Copper | ppm | 1.3 | 1.3 | 0.077 | NO | 2007 | 0 | Corrosion of household plumbing systems |

III. Turbidity – Were there any detections? (✓) Yes, as described below. () No.

| Contaminant | Treatment Technique Limits | Level Detected | Violation? | Sampling Year | Typical Source of Contamination |
|-------------|--|--|------------|---------------|---------------------------------|
| Turbidity | 1. 1 NTU maximum 2. 0.3 – 95% of the time | 1. highest single measurement = 0.37 2. lowest monthly percentage = 99.987% | NO NO | 2007 2007 | Soil runoff |

IV. Other Chemical and Radiological Contaminants – Were there any detections? (✓) Yes, as described below. () No.

| Inorganic/Synthetic/ and Metals | Units of Measurement | MCLG | MCL | Level Detected | Violation? | Range of Detection at Sampling Points | Sampling Year | Typical Source of Contamination |
|---------------------------------|----------------------|------|-----|----------------|------------|---------------------------------------|---------------|---|
| Arsenic | ppb | 0 | 10 | 0.54 | NO | ND-0.54 | 2007 | Erosion of natural deposits; runoff from orchards/manufacturing of glass and electrical products |
| Atrazine | ppb | 3 | 3 | 0.5 | NO | ND –0.5 | 2007 | Runoff from herbicide used on row crops |
| Barium | ppm | 2 | 2 | 0.05 | NO | <0.025-0.05 | 2007 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| Chromium | ppb | 100 | 100 | 3 | NO | ND-3 | 2007 | Erosion of natural deposits, discharge from steel mills |
| Cyanide | ppb | 200 | 200 | 30 | NO | ND-30 | 2007 | Discharge from metal and plastic works, fertilizer factories |
| Dalapon | ppb | 200 | 200 | 1 | NO | ND-1 | 2007 | Runoff from herbicides used to clear rights of way |
| Manganese | ppm | * | * | .063 | NO | ND-.063 | 2007 | Dissolved mineral in well water, mixed with treated in system |
| Simazine | ppb | 4 | 4 | 0.2 | NO | ND–0.2 | 2007 | Herbicide runoff |
| Sodium | ppm | * | * | 9.33 | NO | ND-9.33 | 2007 | Dissolved minerals in well water |
| Selenium | ppb | 50 | 50 | 0.8 | NO | ND-0.8 | 2007 | Erosion, discharge from petroleum refineries and mines |
| Fluoride | ppm | 4 | 4 | 1.2 | NO | 0.05-1.2 | 2007 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| Nitrate (Nitrogen) | ppm | 10 | 10 | 3 | NO | 0.1-3 | 2007 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Nitrite (Nitrogen) | ppm | 1 | 1 | 0.1 | NO | ND-0.1 | 2007 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Nitrate+Nitrite=N | ppm | 10 | 10 | 3.36 | NO | ND-3.36 | 2007 | Same as separate Nitrate/Nitrites |

* No MCL, not considered a health risk.

| Contaminant/DBPs/Disinfection Byproducts | Running Annual MCLG (ppb) | Average MCL (ppb) | System Running Annual Average (ppb) | System Range (ppb) | Violation? | Sampling Year | Typical Source of Contamination |
|--|---------------------------|-------------------|-------------------------------------|--------------------|------------|---------------|--|
| TTHMs [Total Trihalomethanes] | 0 | 80 | 33 | 15-53 | NO | 2007 | Byproduct of drinking water chlorination |
| Haloacetic Acids(5) | 0 | 60 | 29 | 7--62 | NO | 2007 | Byproduct of chlorination |
| Chloramines mg/l | 4 | 4 | 2.12ppm | 1.8–2.75 | NO | 2007 | Maximum residual disinfectant level |
| Total Organic Carbon | | | 1.2 TT ratio | 0.8–2.17 | NO | 2007 | *See notes on how to read this chart |

| Radionuclides | Units of Measurement | MCLG | MCL | Highest Level Detected | Range of Detection | Violation? | Sampling Year | Typical Source of Contamination |
|----------------|----------------------|------|-----|------------------------|--------------------|------------|---------------|--|
| Alpha emitters | pCi/L | 0 | 15 | 1.4 | 0.2 – 1.4 | NO | 2003/2007 | Erosion of natural deposits |
| Beta emitters | pCi/L | 0 | 50 | 4.9 | ND – 4.9 | NO | 2003/2007 | Decay of natural and man-made deposits |
| Radium 228 | pCi/L | 0 | 5 | 1.2 | 0.2 – 1.2 | NO | 2003/2007 | Erosion of natural deposits |

Town of Vienna
127 Center Street, South
Vienna, Virginia 22180-5799

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2007 WATER QUALITY REPORT